AMENDMENTS TO THE CLAIMS

Please accept amended claims 1, 6, 15, 18 and 29 as follows:

1. (Currently Amended) A communication system comprising:

a signal transmitting device having

a sending CPU and a sending memory;

a generated signal template for generating a signal pattern to be transmitted;

a signal display for displaying the signal pattern generated by said generated signal template as a visual image;

a signal display controller for controlling position and orientation of said signal display;

a signal receiving device for communicating with said signal transmitting device having

a receiving memory and a receiving CPU;

a visual recording device for sensing the signal pattern ~~of~~ displayed by the signal display;

an image decoder for decoding the signal pattern; and

a visual recording device controller for automatically controlling the orientation and zoom of said visual recording device, wherein communication between said signal transmitting device and said signal receiving device is established by the visual recording device detecting and decoding the visual images displayed by the signal display.

2. (Original) The system of claim 1, wherein a plurality of mirrors are used to transmit signal patterns between a signal transmitting device and a signal receiving device having obstructions between them.

3. (Original) A method of visual communication between a signal transmitting device and a signal receiving device comprising the steps of:

adjusting a signal display of said signal transmitting device and a visual recording device of said signal receiving device and using an alternating display process to establish a visual connection between said signal display and said visual recording device;

encoding a signal pattern using a generated signal template of said signal transmitting device;

visually transmitting the signal pattern through free space from the signal display of said signal transmitting device;

receiving an image of the signal pattern using the visual recording device of said signal receiving device; and

decoding the signal pattern using an image decoder of the signal receiving device.

4. (Original) The method of claim 3, wherein the step of decoding includes the steps of:

dividing the image of the signal pattern into a plurality of blocks;

determining the centers of said blocks using a position and radius look-up table;

creating a plurality of circles within said blocks having corresponding centers and radiuses determined by the position and radius look-up table;

calculating average image intensities within said circles;

using average image intensities within said circles as average image intensities of respective blocks of each of said circles;

determining a plurality of black and white intensities from said average intensities of respective blocks of each of said circles using predetermined values; and

decoding a pattern created by said black and white intensities.

5. (Original) The method of claim 3, wherein the alternating display process comprises the steps of:

alternating an image on the signal display of a sending device within an allotted time;

collecting a plurality of alternating images by a visual recording device of a receiving device within an allotted time;

calculating image differences of consecutive alternating images;

changing said image differences into black and white images based on pixel values; and

collecting a plurality of blobs for each of said image differences using the visual recording device, wherein the blob having a largest area value represents the signal display.

6. (Currently Amended) The method of claim 3 wherein the step of adjusting the visual recording device includes the steps of:

automatically adjusting pan and tilt of the visual recording device to have a view of the signal pattern displayed by the signal display; and

automatically adjusting an angle size of the recording device.

7. (Original) The method of claim 4, wherein the radiuses of said circles are 35% of the length of their respective blocks.

8. (Original) The method of claim 5, wherein the blobs are groups of adjoining pixels each having an identical pixel value.

9. (Original) The method of claim 6, wherein the step of automatically adjusting the pan and tilt for a visual recording device comprises the steps of:

selecting a first tilt and a first pan position;

panning for a position that does not overlap said first pan position;

checking if panning positions have been exhausted;

determining whether the first tilt is in a horizontal position if all panning positions have been exhausted; and

determining a new tilt by moving the first tilt upwards for the value of $h/2$ if the first tilt is in a horizontal position.

10. (Original) The method of claim 9, wherein if all panning positions have not been exhausted, the step of panning for a position that does not overlap the first pan position is repeated.

11. (Original) The method of claim 9, wherein if the first tilt is above the horizontal position, the new tilt will be below the horizontal position and symmetric to the first tilt.

12. (Original) The method of claim 9, wherein if the first tilt is below the horizontal position, including the steps of:

determining that the first tilt is not above the horizontal position;

finding a previous tilt that is symmetric to the first tilt and is above the horizontal position;

creating a possible tilt by moving the first tilt upwards for $h/2$ with respect to said previous tilt; and

determining if said possible tilt passes a vertical direction with respect to the horizontal position.

13. (Original) The method of claim 12, wherein if said possible tilt passes the vertical position, then all tilts are exhausted.

14. (Original) The method of claim 12, wherein if said possible tilt does not pass the vertical position, then said possible tilt is a next tilt.

15. (Currently Amended) A program storage device readable by machine, tangibly embodying a program of instructions executable by machine to perform method steps for communication between processing devices comprising the steps of:

generating a signal pattern using a generated signal template;

displaying the signal pattern on a signal display;

adjusting a visual recording device and said signal display and using an alternating display process to establish a visual connection between the processing devices;

acquiring, visually, an image of the signal pattern displayed by the signal display using the visual recording device; and

decoding the signal pattern with an image decoder.

16. (Original) The program storage device of claim 15, wherein the instructions for decoding includes instructions for:

dividing the image of the signal pattern into a plurality of blocks;

determining the centers of said blocks using a position and radius look-up table;

creating a plurality of circles within said blocks having corresponding centers and radiuses determined by the position and radius look-up table;

calculating average image intensities within said circles;

using average image intensities within said circles as average image intensities of respective blocks of said circles;

determining a plurality of black and white intensities from said average intensities of respective blocks of said circles using predetermined values; and

decoding a pattern created by said black and white intensities.

17. (Original) The program storage device of claim 15, wherein the alternating display process comprises the steps of:

alternating an image on the signal display of a sending device within an allotted time;

collecting a plurality of alternating images by a visual recording device of a receiving device within an allotted time;

calculating image differences of consecutive alternating images;

changing said image differences into black and white images based on pixel values; and

collecting a plurality of blobs for each of said image differences with the visual recording device, wherein

the blob having a largest area value represents the signal display.

18. (Currently Amended) The program storage device of claim 15, wherein the instructions for performing the step of adjusting the visual recording device and said signal display includes instructions for:

automatically adjusting the pan and tilt of the visual recording device to have a view of the signal pattern displayed by the signal display; and

automatically adjusting the angle size of the recording device.

19. (Original) The program storage device of claim 16, wherein the radiuses of said circles are 35% of the length of their respective blocks.

20. (Original) The program storage device of claim 17, wherein the blobs are groups of adjoining pixels each having an identical pixel value.

21. (Original) The program storage device of claim 18, wherein the instructions for performing the step of automatically adjusting the pan and tilt for a visual recording device includes instructions for performing the steps of:

selecting a first tilt and a first pan position;

panning for a position that does not overlap said first pan position;

checking if panning positions have been exhausted;

determining whether the first tilt is in a horizontal position if all panning positions have been exhausted; and

determining a new tilt by moving the first tilt upwards for the value of $h/2$ if the first tilt is in a horizontal position.

22. (Original) The program storage device of claim 21, wherein if all panning positions have not been exhausted, the instructions for performing the step of panning for a position that does not overlap the first pan position are repeated.

23. (Original) The program storage device of claim 21, wherein if the first tilt is above the horizontal position, the new tilt will be below the horizontal position and symmetric to the first tilt.

24. (Original) The program storage device of claim 21, wherein if the first tilt is below the horizontal position, including instructions for performing the steps of:

determining that the first tilt is not above the horizontal position;

finding a previous tilt that is symmetric to the first tilt and is above the horizontal position;

creating a possible tilt by moving the first tilt upwards for $h/2$ with respect to said previous tilt;

determining if said possible tilt passes a vertical direction with respect to the horizontal position.

25. (Original) The program storage device of claim 24, wherein if said possible tilt passes the vertical position, then all tilts are exhausted.

26. (Original) The program storage device of claim 24, wherein if said possible tilt does not pass the vertical position, then said possible tilt is a next tilt.

27. (Previously Presented) A signal transmitting device comprising:

a sending CPU and a sending memory;

a generated signal template for generating a signal pattern to be transmitted, wherein the signal pattern is a visual pattern of blobs;

a signal display for displaying the signal pattern generated by said generated signal template; and

a signal display controller for controlling a position and an orientation of said signal display relative to a signal receiving device, wherein the signal pattern is visible to the signal receiving device.

28. (Previously Presented) The signal transmitting device of claim 27, wherein each blob is a plurality of adjoining pixels each having an identical pixel value, wherein a pixel value is selected from the group consisting of black and white.

29. (Currently Amended) A signal receiving device comprising:

a receiving memory and a receiving CPU;

a visual recording device for visually determining a signal pattern of a signal display, wherein the signal pattern is a visual pattern of blobs;

an image decoder for decoding the signal pattern; and

a visual recording device controller for automatically controlling the orientation and zoom of said visual recording device, wherein communication between a signal transmitting device comprising the signal display and the signal receiving device is established by the visual recording device detecting and decoding the signal pattern displayed by the signal display.

30. (Previously Presented) The signal receiving device of claim 29, wherein each blob is a plurality of adjoining pixels each having an identical pixel value, wherein a pixel value is selected from the group consisting of black and white.